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## **What can we learn from Plato about intellectual character education?**

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In the *Republic*, Plato developed an educational program through which he trained young Athenians in desiring truth, without offering them any knowledge-education. This is not because he refused to pass on knowledge but because he considered knowledge of the Good as an ongoing research program. I show this by tracing the steps of the education of the Philosopher-Kings in Plato's ideal state, to establish that the decades-long educational regime aims at training them in three types of virtue: (i)Moral Virtue; (ii)the Cognitive Virtue of Abstraction; (iii)the Cognitive Virtue of Debate.

Plato's theory of education has much to teach us about intellectual character education today. The Platonic educational program does not advocate the direct transmission of knowledge from teacher to learner but rather focuses on building the learners' epistemic dispositions. Building upon the Socratic Method, Plato's educational program does not 'spoon-feed' knowledge to the learners but rather fosters the growth of intellectual virtues through problem-solving.

I explain ways in which fostering intellectual virtues through problem-solving could be applied in classrooms today. I conclude that Plato's rigorous educational program is of definite merit for contemporary virtue education, especially since Aristotle offers us surprisingly little on how to educate for intellectual virtues.

Keywords: intellectual character education, epistemic dispositions, problem-solving, Plato.

### **1. Contemporary Approaches to Education and the Concept of Intellectual Virtue**

Contemporary virtue-based approaches to education heavily rely and build upon the Aristotelian theory of education and conception of virtue (e.g. Carr, 1991; Curren, 2014; Kristjánsson, 2015)

while the Platonic educational program and the Platonic conception of virtue are somewhat ignored by scholars working in virtue education. My aim in this paper is to revisit Plato's rigorous educational program, which he lays out to a great extent in the *Republic*, and look for teaching methods that can be of value for contemporary virtue-based approaches to education that aim to foster the growth of both moral and epistemic virtues. I will be presenting two main arguments. The first argument is that the Platonic educational program does not advocate the direct transmission of knowledge from teacher to learner; its primary purpose rather is the building of the *learners' epistemic dispositions*. The second argument, which is closely connected to the first, is that the Platonic educational program has something unique to offer to contemporary virtue-based approaches to education and that is *learning through problem-solving*. I will show that the Platonic educational program aims at training learners in three types of virtue: (i) Moral Virtue; (ii) the Cognitive Virtue of Abstraction; (iii) the Cognitive Virtue of Debate. My overall aim is to show that Plato's rigorous educational program has much to offer to contemporary theories of education.

For the purposes of this paper, I will be using the Aristotelian and neo-Aristotelian<sup>1</sup> conception of virtue as a way to identify and explain the Platonic conception of intellectual excellences (while at the same time leaving aside the subtle differences between the two philosophers' conceptions). Aristotle identified two parts in the human soul - the rational and the appetitive – and argued that a different kind of virtue corresponds to each part of the soul (*EN*, 1139a1-5). Intellectual virtues correspond to the rational part and moral virtues to the appetitive part. He conceived of moral virtues as dispositions involving choice, lying in a mean between two vices and determined by that reason that a prudent person would determine it (*EN*, 1107a1-3). In

contrast, he defined intellectual excellences as ‘states by virtue of which the soul possesses truth by way of affirmation or denial’ (*EN*, 1139b15-18).

Still, in the Platonic philosophical corpus there are several strong indications that Plato, and not Aristotle (as a number of contemporary virtue scholars believe - see e.g. Zagzebski, 1996; Kvanvig, 1992), was the first to conceive of intellectual virtues. This realization is not only of historic interest; the Platonic conception of intellectual virtues could be the basis onto which new contemporary virtue epistemological theories could rely and build upon. The Platonic conception of intellectual virtues could also prove promising in contemporary debates on the relation between moral and intellectual virtues and in virtue-based approaches to education. In this paper, I focus on the latter.

The two most significant indications for Plato’s inception of the notion of intellectual virtues are (i) his conception of rational desires and (ii) his dialectical method. Rational desires<sup>2</sup> constitute the epistemic drive that is necessary for an agent to be intellectually virtuous. The agent who possesses strong rational desires has a strong motivation to pursue epistemic goods - a drive which is essential for the development of intellectual virtues. There is a number of sections in several of Plato's dialogues where he discusses the significance of rational desires. Indicatively, Plato’s rigorous educational program in the *Republic* aims at the development of rational desires (VII, 521d-540c); while in the *Symposium*, one can find a discussion on the intense rational desire for knowing the truth (209a-e). In addition, in the *Phaedrus*, the purest form of love is portrayed as a strong desire to acquire knowledge of the Forms - a strong desire for rational goods – that leads to the best human life: that of the philosopher (253c-256e).

Moreover, Plato’s dialectical method is another significant indicator of his conception of intellectual virtues. According to Plato, the dialectical method is the only reliable method that an

agent has at her disposal in order to pursue and acquire epistemic goods (for more on the dialectic, see sections 2 and 4). It is only through employing the dialectical method that philosophers can reach intellectual ends (*Rep.*, VII, 532a-b). The combination of rational desires (as the motivator for the pursuit of rational goods) and the dialectic (as a reliable<sup>3</sup> method for acquiring rational goods) satisfies both the motivational and the success component of intellectual virtues identified by Neo-Aristotelian scholars such as Zagzebski (1996, p. 270). My argument that Plato was the first to conceive of intellectual virtues leads me to examine what the Platonic virtue-based approach to education has to offer to contemporary theories of virtue education.

The contemporary debate between virtue responsibilists and virtue reliabilists informs contemporary approaches to virtue education that want to incorporate the fostering of both moral and intellectual virtues. At the heart of this debate lie the different conceptions of intellectual virtues offered by the two camps. Virtue reliabilists conceive of intellectual virtues as good cognitive faculties of the mind that lead to intellectual goods. Memory and vision, for example, are some of the faculties that they identify as intellectual virtues (e.g., Sosa, 1991, 2007; Greco, 1999, 2002; Pritchard, 2010, 2013), an intellectual virtue is ‘...a quality bound to help maximize one's surplus of truth over error’ (Sosa, 1991, p. 225) and a belief ‘... is justified, just in case it has its source in an intellectual virtue’ (Sosa, 1991, p. 189). In contrast, virtue responsibilists (e.g. Code, 1987; Zagzebski, 1996; Battaly, 2006; Montmarquet, 1993) conceive of intellectual virtues as epistemically valuable traits of character for which the agent is responsible (see for example Code, 1987, p. 20). Some of the most common character traits that they consider as intellectual virtues are open-mindedness, intellectual tenacity and attentiveness. However, although I acknowledge the importance of the debate between virtue responsibilists and virtue reliabilists for contemporary virtue epistemology and virtue education, it would be anachronistic (and fruitless)

to attempt to categorize the Platonic conception of intellectual virtues in either of the two camps. As it will become evident later on in the discussion, the Platonic educational program can be of significant value for contemporary virtue-based approaches to education irrespectively of whether they stem from a reliabilist or a responsibilist understanding of intellectual virtues.

Having laid out the necessary background information, I am now going to briefly present the Platonic educational program as portrayed in the *Republic* (Section 2). I am then going to discuss how this educational regime builds the epistemic character of learners (Section 3) and outline Plato's learning through problem-solving approach (Section 4). I will conclude with a brief sketch of how this approach could be applied in classrooms nowadays (Section 5).

## **2. The Platonic Educational Program**

It is of the utmost importance for the purpose of this paper that I begin with an overview of Plato's rigorous educational program. Through the discussion that will follow certain integral features of Plato's educational program will be highlighted (i.e. the link between the education for moral virtues and the education for intellectual virtues). Then, in the sections that follow, I am going to discuss the significance of some of these features for contemporary approaches to virtue education. Throughout the paper, I focus on Plato's philosophy of education as presented in the *Republic*. This is because the *Republic* is the dialogue in which mature Plato presents and discusses his rigorous educational program most extensively.

In the *Republic*, Plato divides his educational program in to two stages, with each stage having two parts. The first part of the first stage of Plato's educational program is literary education – viz. the study of poems and the music that accompanies them (*Rep.*, III, 376c5-403c5). The

second part of the first stage of Plato's educational program focuses on physical and military training<sup>4</sup> (403c5-412a). The first stage of Plato's educational program has a very specific aim. It aims at producing a good character and a harmonious soul - it aims at disciplining the mind. It does not aim at transferring knowledge to the learners but rather prepares them for the second stage of Plato's educational program by fostering the development of moral virtues such as the virtue of self-control and justice:

That...was the complement of their physical education. It gave a training by habituation, and used music and rhythm to produce a certain harmony and balance of character and not knowledge; and its literature, whether fictional or factual, had similar effects. There was nothing in it to produce the effect you are seeking (i.e. the transition from the phenomenal world to the reality of the Forms) (*Rep.*, VII, 522a5-b).

The first stage of Plato's educational program is instrumental for the successful education of the guardians<sup>5</sup>. Without a harmonious soul and a good character, the guardians will be led astray. According to Plato's theory of the tripartite soul, the soul has three parts: the rational, the spirited and the appetitive (*Rep.*, IV, 439a-440e). Plato argues that the rational part, with the help of the spirited, must overcome appetitive desires if an agent is to reach their full potential (*Rep.*, X, 589a5-c). According to Plato, one is just only when each part of her soul performs its proper function. For him, justice is balance of the soul parts while injustice is imbalance (IV, 444b). Plato argues that without proper education and character training the appetitive part of the soul, being the largest one, is bound to lead the soul (588d-589a4). Therefore, if not properly trained and habituated in moral virtues, guardians will be led by their appetitive desires; they will have no

interest in pursuing epistemic goods. They will be forever trapped in the world of perception. Contrary to Aristotle who believed that intellectual virtues are important for acquiring moral virtues, Plato thought that moral virtues are a necessary prerequisite for the development of intellectual ones. According to Plato, an agent needs firstly to develop moral virtues before being able to develop epistemic virtues. This is why, according to the Platonic philosophy of education, virtue-based approaches to education should begin with moral virtue education.

Guardians who have demonstrated an aptitude for learning and have developed a harmonious soul and a good character will move on to the second stage of the educational program. While the first stage was primarily concerned with moral character training, the second stage seeks to train the epistemic dispositions of guardians in order to enable them to reach, as much as humanely possible, to an understanding of what really exists (i.e. the world of the Forms). The second stage of Plato's educational program, as presented in the *Republic*, is again split into two parts. The first part consists in the study of five mathematical sciences: i) arithmetic, ii) plane geometry, iii) solid geometry, iv) astronomy and v) harmonics (*Rep.*, VII, 524d10-531c). Plato does not include the study of these five sciences out of an interest for the advancement of the physical sciences. He is rather interested in training guardians to 'think abstractly' (Cornford cited in Lane and Lee, 2007, p. 259). The primary aim of the mathematical studies is to train guardians in the cognitive virtue of abstraction. For Plato, the virtue of abstraction '...draws the mind to the truth and direct the philosophers' reason upwards, instead of downwards' (527b10-c). Successfully engaging in the cognitive ability of abstraction (which is the activity characteristic of the specific virtue in question) allows them to move from the physical world of perception to the intelligible realm (which is only accessible through pure reasoning). It helps guardians move from the state of



belief (*pistis*) to the state of mathematical reasoning (*dianoia*). The cognitive virtue of abstraction is a prerequisite for guardians advancing to the study of the dialectic.

Nevertheless, Plato argues that the study of these five mathematical sciences is not enough because they involve certain assumptions that do not allow the mind to acquire knowledge of the Forms (*noesis*). Therefore, those who have excelled in their education are introduced to the study of the dialectic (*Rep.*, VII, 531d-534e). The dialectic is the only procedure that ‘destroys’ assumptions, by undoing their status as mere assumptions, and moves towards their justification through the first principle (531c5-10). Those who become experts in the dialectical method acquire the cognitive virtue of debate. According to Plato, having the cognitive virtue of debate entails that (i) they are able to give the account of ‘the essential nature of each thing’ (534b2). (ii) They are able to ‘ask and answer questions with the highest degree of understanding’ (534d10-15). And most importantly for Plato, (iii) they are able to acquire understanding of the Form of the Good because they are able to give an account of the Form of the Good and reply to all objections and questions raised against them (534b). For Plato, acquiring understanding of the Forms and the Form of the Good is necessary for agents to become truly virtuous, both morally and intellectually (540a-b).

### **3. Fostering the Growth of Epistemic Dispositions**

The aim of contemporary epistemic virtue-based approaches to education is, in short, to nurture the growth of intellectual virtues. Despite their conceptual differences, this educational goal unites the reliabilist and responsibilist traditions. For example, according to Pritchard (who is a virtue reliabilist) ‘we don’t just want an education to provide children with a body of true beliefs that they can call upon, but also to provide children with the cognitive skills to be able to determine

truths for themselves’ (2013, p. 237). Similarly, according to Battaly (who is a virtue responsibilist) ‘we want our students to become skilled in deductive and inductive reasoning, to become open-minded, conscientious, and intellectually courageous, and to care about truth for its own sake. In short, we want our students to become intellectually virtuous’ (2006, p. 191). Scholars, such as Baehr (2013), argue on the value of intellectual virtues and point out that incorporating them in contemporary educational programs is worth the effort. According to Baehr, ‘conceiving of education as properly aimed at nurturing growth in intellectual character virtues provides a much better way of capturing the putative meaning and purpose of teaching and learning’ (2013, p. 112). My aim in this section is to show that this educational goal, although attributed to contemporary virtue theorists, originates from Plato and Platonic Socrates.

Plato questioned whether we can attain knowledge but nevertheless went on to develop his Socratically inspired theory of education according to which we can teach learning without knowing. Socrates proclaimed his ignorance numerous times<sup>6</sup>; nevertheless, he went on to educate the youth of Athens. Plato’s notion of epistemic excellence highlights that educators should teach children not by transferring knowledge to them directly but by building dispositions into them to seek and acquire epistemic goods. Plato’s educational program (VII, 521d-540c) aims at training the epistemic dispositions and character of the students; it aims at developing their rational desire for intellectual ends.

The importance of having undergone the proper character training, and having therefore developed the right dispositions for acquiring epistemic goods, is evident throughout the *Republic*. Indicatively, in Book VII of the *Republic*, Socrates notes that ‘the eye cannot be turned unless the whole body is turned and likewise the intellect cannot be turned unless the whole soul is turned’ (518c). Passages, such as the one above, show the importance of character education. According

to Plato, only those agents who desire and pursue truth – whose whole soul has been tuned towards the pursuit of rational goods by the right character education - shall discover it<sup>7</sup>. Similarly, at a later stage in the *Republic*, Socrates argues that ‘Bodily exercise when compulsory, does no harm to the body, but knowledge, which is acquired under compulsion obtains no hold on the mind’ (VII, 536e). This again shows that agents need to desire knowledge in order to retain it - an issue that touches upon what Dewey says in *Democracy and Education*:

In schools, those under instruction are too customarily looked upon as acquiring knowledge as theoretical spectators, minds which appropriate knowledge by direct energy of intellect. The very word pupil has almost come to mean one who is engaged not in having fruitful experiences but in absorbing knowledge directly. Something which is called mind or consciousness is severed from the physical organs of activity (1916, p. 164).

Despite the fact that Dewey’s and Plato’s theories of education are often understood as defending opposite views, the Platonic educational program is in accordance with Dewey’s argument<sup>8</sup>. Both ultimately aim in creating, through their educational theories, active learners. The development of rational desires for epistemic goods, which is at the heart of the Platonic educational program, aims specifically at creating active inquirers who are motivated in their intellectual pursuits. It aims at creating philosophers (i.e. lovers of wisdom).

The Platonic approach to education is not only in agreement with Dewey’s arguments for active learning, it is also in line with a general complaint raised by several contemporary philosophers of education:

Furthermore, it seems to have been a regular complaint of past and present educational philosophers that education has too often been focused upon the transmission of such useless or mere facts to young people in schools (Carr, 1991, p. 118).

This complaint is also in line with what Socrates is trying to achieve through his Socratic method. Socratic dialogues<sup>9</sup>, for example, typically end in *aporia* (e.g. *Laches*, *Charmides*, *Meno*) – we do not get an answer to the question Socrates and his interlocutors are trying to find. This lack of answer aims at building the epistemic character of the students/interlocutors rather than transferring knowledge to them directly.

#### **4. Learning through Problem-Solving**

At this point, the obvious question one could ask is: Why should we opt for the Platonic educational program as the basis for contemporary virtue-based approaches to education? Isn't the Aristotelian way of educating virtues good enough (and better than the Platonic)? Aristotle offers quite a detailed account (see for example *EN*, Book II) of how one comes to acquire moral virtues (i.e. through habituation, mimesis and exemplarism) and his account has led to the development of several contemporary approaches to moral virtue education (e.g. Carr, 1991; Curren, 2014; Kristjánsson, 2015). Still, Aristotle offers surprisingly little concerning the way agents come to acquire intellectual virtues. One of the very few things he notes is that '...intellectual virtue in the main owes both its birth and its growth to teaching (for which reason it requires experience and time)' (*EN*, 1103a14-15). This does not leave virtue educators, who want to foster epistemic virtues, much to work with. In contrast to Aristotle, Plato has provided us (in his discussion of the

education of the Philosopher-Kings in his ideal city-state) with an extensive account of his *learning through problem-solving*<sup>10</sup> method for developing intellectual virtues.

Socrates, like Plato, also thought that teachers should develop the character of the learners instead of ‘spoon-feeding’ them knowledge. In order to do so, Socrates developed a problem-solving teaching method: He would pose questions to his students/interlocutors and he would challenge them to find the solution. Socrates would never transmit knowledge to his interlocutors (and wider audience) directly – he would never give them the answers though he had them. The slave boy demonstration<sup>11</sup> (82a-86a) performed by Socrates in the *Meno* is an excellent example of this problem-solving teaching method.

Following Socrates, Plato further developed and codified this problem-solving method into the dialectic. He focused on the dialectic as the most fundamental way of developing epistemic excellences. In the *Republic*, Plato points out that philosophers practice together; they debate over and work on definitions collectively (VII, 534c). The dialectic, which according to Plato is the only method at our disposal for searching for the truth (532a-b), is a problem-solving method<sup>12</sup>. Philosophers usually face problems in the form of defining x and seek for the truth through the dialectical method. The Platonic educational program prepares philosophers for this. It develops their epistemic virtues through problem-solving techniques (e.g. being exposed to mathematical problems), with the aim to ‘produce’ philosophers (i.e. lovers of wisdom) who are able to acquire truth and understanding through the dialectic (i.e. a problem-solving method for finding the truth). Still, Plato's problem-solving method is not a mechanistic one; a quite significant aspect of it rather involves problem identification. Indicatively, when practicing the dialectical method, philosophers must specify and refine the problems they encounter by putting them in terms of definitions (e.g. what is beauty?).

But why is this problem-solving method unique to Plato and Platonic Socrates? Surely we can get a more contemporary account of problem-solving from another philosopher rather than having to rely on the dialogues that Plato wrote more than 2500 years ago. I argue that we cannot. Plato's learning through problem-solving account has something unique that sets it apart from any other problem-solving approach to teaching: Plato promotes learning to learn in a 'pure' way, by which I mean a way that enables the teacher to teach, not only without directly transmitting knowledge to the students, which we promote nowadays, but without even knowing. This method that Socrates 'invented' and Plato fully developed is a method through which we can teach the young to want to investigate. This is a meta-skill: not how to learn by problem-solving, but to love and seek problem-solving.

I want to argue that such a problem-solving teaching method can be of significant value for contemporary virtue education. It can help us develop the learners' desire for epistemic goods as well as train them in acquiring such goods on their own. It can help us do what scholars in virtue-based approaches to education urge educators to do, viz. create lifelong learners who love truth and knowledge and are also skilled and intelligent in their pursuit of these goods (Baehr, 2013, p. 108). Still, applying Plato's problem-solving method in classrooms does not entail also abiding to his beliefs that men are born into classes nor to the theory of Forms. When applying the Platonic method for instilling intellectual virtues, educators can maintain their contemporary understanding of truth and knowledge and should treat all students as philosopher-kings.

## **5. Problem-Solving and Intellectual Character Education**

It is often highlighted that virtue-based approaches that promote the fostering of both moral and intellectual excellences is a new trend in philosophy of education. It is only to be expected

therefore, that being a recent educational approach, there are still no accepted best practices for helping students develop intellectual virtues (Baehr, 2016, p. 246). In addition, as I have already noted, Aristotle offers us surprisingly little on how to educate for intellectual virtues. This is where what I have been discussing in this paper (i.e. building the epistemic dispositions of learners through problem-solving) can find application. Plato has given us his method for cultivating epistemic excellences in his description of the ideal city-state. The core of his method can, and should be applied, in education nowadays. As I show below, Plato's problem-solving approach incorporates elements of problem-based learning<sup>13</sup> (see Barrows and Tamblyn, 1980; Margetson, 1993; Hmelo-Silver, 2004; for an overview on contemporary problem-based learning) - viz. active learning and the development of problem-solving skills - in intellectual character education (i.e. building epistemic dispositions; fostering intellectual virtues). As far as I am aware, contemporary virtue theorists have not considered applying the principles of problem-based learning to intellectual character education. Still, Plato has already done that for us in his learning through problem-solving method.

In what follows, I give a brief outline of how we might go about applying Plato's learning through problem-solving method in classrooms nowadays. Following the Platonic approach, the educators who want to foster intellectual virtues in their students should not transfer knowledge directly to them – because that 'kills' the learners' motivation to pursue rational goods (see e.g. Hidi, 2001; Hidi and Renninger, 2010). Traditional methods of teaching hand knowledge and truth to the learners; hence the vast majority of learners do not develop an intrinsic motivation to pursue epistemic goods. Instead, following the Platonic problem-solving method, the educator should pose problems that challenge the learners to find the solution. According to Plato's educational program, we should train students in truth-seeking. It is through this search for truth and knowledge

that they will develop intellectual virtues. Even if the educator knows the correct answer to the problem, they should never give it to their students; the educator should only hint at where the learners' mistakes lay and teach them ways to solve the problem on their own (this is also in accordance with the principles of contemporary problem-based learning – see Hmelo-Silver, 2004). The educator should facilitate the learning process. Again the paradigm case for this is the Socratic slave demonstration (*Meno*, 82a-86a) and the way the slave is led to the correct answer through Socrates' questions.

The problems posed to the students can (and ought to) be of a great variety of topics (e.g. mathematical problems, political problems, scientific problems, moral dilemmas, problems of an aesthetic nature, etc.). The difficulty of the problems should depend on the age, ability and educational level of the learners (Hmelo-Silver, 2004). Problems should not be presented to students in a clear-cut and ready to be solved fashion; but rather in a manner (e.g. in the context of a story) that trains them in problem-identification, viz. identifying and specifying the nature of a problem. The problems should be challenging to solve. By facing difficult (yet not impossible) problems and being challenged to solve them, students will develop epistemic emotions<sup>14</sup> - such as the need to rise up to the challenge and the excitement to solve the problems - that will aid their pursuit of rational goods (Morton, 2010).

Leaving certain problems unanswered can be of great value; the aim of this approach is to foster the growth of epistemic virtues; and sometimes aporetic conclusions strengthen the learners' motivation to pursue epistemic goods (again the paradigm case for this are the aporetic conclusions of early Socratic dialogues). Whether the learners find the correct answer to a specific problem is of secondary significance, what is important is that they develop the desire for epistemic goods and the ability to acquire such goods on their own; what is important is that they develop



intellectual virtues. Plato's learning through problem-solving method promotes both virtue responsibilists' and virtue reliabilists' sets of intellectual virtues. It promotes, for example, epistemic conscientiousness<sup>15</sup> as well as various kinds of good reasoning<sup>16</sup>.

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### Notes

<sup>1</sup>Here I am mostly referring to Zagzebski's Neo-Aristotelian conception of intellectual virtues: According to Zagzebski, a virtue is a '...deep and enduring acquired excellence of a person, involving a characteristic motivation to produce a certain desired end and a reliable success in bringing about that end' (1996, p. 137). She argues that every intellectual virtue has two main components: a motivational and a success component. For her, an intellectually virtuous agent is motivated by and is reliably successful at achieving certain intellectual ends (1996, p. 270).

<sup>2</sup>The Platonic use of the word philosopher - lover of wisdom - is another significant indicator of the importance of rational desires. A lover of wisdom is by definition motivated by her rational desires for intellectual ends.

<sup>3</sup>One might object as to the reliability of the dialectic but the fact that Plato thought that philosophers are reliably successful at reaching the objects of their rational desires through the dialectic suffices for my argument: it shows that he had a concept equivalent to the contemporary understanding of the success component of intellectual virtues.

<sup>4</sup>See Surprenant (2014) for a more detailed discussion on the importance of physical education for the acquisition of virtue.

<sup>5</sup>For the importance of moral training for epistemic endeavors see for example *Rep.*, IX, 571e: 'But a man of sound and disciplined character, before he goes to sleep, has wakened his reason and given it its fill of intellectual argument and inquiry; his desires he has neither starved nor indulged, so that they sink to rest and don't plague the highest part of him with their joys and sorrows, but leave it to pursue its investigations unhampered and on its own, and to its endeavours to apprehend things still unknown to it...'

<sup>6</sup>See for example the *Apology*, 22c: 'I am wiser than this human being. For probably neither of us knows anything noble and good, but he supposes he knows something when he does not know, while I, just as I do not know, do not even suppose that I do'.

<sup>7</sup>For a similar point see Mason, 2010, p. 98.

<sup>8</sup>See for example Dewey, 1916, p. 104: ‘Plato had no perception of the uniqueness of individuals... [he thought] they fall by nature into classes’. See also, Reich, Garrison & Neubert, 2016 on some of the fundamental differences between Plato’s and Dewey’s theories).

<sup>9</sup>I follow Vlastos’ (1991) taxonomy of early, middle and late Platonic dialogues. According to Vlastos, the character of Socrates in the early dialogues is more faithful to the historic Socrates while from the middle dialogues onwards the character of Socrates is used by Plato as a mouthpiece of his own philosophical views.

<sup>10</sup>The importance of developing problem-solving skills, such as asking the right questions, is not a new idea. For example, Blank and Covington have shown that training children in problem-solving helped children ‘...receive higher scores on a science achievement test, and to be rated superior to the other two groups (groups which did not receive such training) in terms of participation in class discussion’ (1965, p. 21). In addition, see Wood and Middleton (1975) who have also highlighted the benefits of effective problem-solving tutoring. For more recent data on the merits of problem-based learning, see Hmelo-Silver (2004). She notes, for example, that ‘the evidence suggests that PBL (problem-based learning) is an instructional approach that offers the potential to help students develop flexible understanding and lifelong learning’ (p. 235).

<sup>11</sup>Socrates poses a geometry problem (how to double the area of a square) to the slave boy. Socrates does not give the slave boy the solution to this problem even when the slave boy gives him the wrong answers.

<sup>12</sup>The mathematical studies that came before the dialectic are also part of Plato’s learning through problem-solving method: ‘we should therefore treat astronomy, like geometry, as setting us problems for solution’ (*Rep.*, VII, 530c).

<sup>13</sup>Very briefly and crudely put, problem-based learning (PBL) is a teaching method through which students learn via problem-solving in contrast to the method of direct transmission of knowledge employed by traditional approaches to education (Margetson, 1993). The PBL approach has its roots in Dewey’s (1938) call for practical experience in learning.

<sup>14</sup>Epistemic emotions are ‘emotions that play an important role in our attempts to acquire beliefs correctly, beliefs that we have reason to continue holding and which serve the purposes for which we acquired them’ (Morton, 2010, p. 385). For example, see Candiotto (2017) on the important role that the emotion of shame plays in the Platonic educational program.

<sup>15</sup>According to Montmarquet, epistemic conscientiousness entails ‘...a desire to achieve the proper ends of intellectual life, especially the desire for truth and the avoidance of error’ (1993, p. 21).

<sup>16</sup>According to Greco, intellectual virtues include ‘perception, reliable memory, and various kinds of good reasoning’ (2002, p. 287).

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